

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/051849

International filing date (day/month/year)
19.08.2004

Priority date (day/month/year)
26.11.2003

International Patent Classification (IPC) or both national classification and IPC
G05D23/24, G06F1/20

Applicant
MOTOROLA INC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
PCT/EP2004/051849

IAP20 Rec'd PCT/PTO 23 MAY 2006

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/051849

Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2,5,8-10
	No: Claims	1,3,4,6,7,11-16
Inventive step (IS)	Yes: Claims	
	No: Claims	1-16
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
 INTERNATIONAL SEARCHING
 AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2004/051849

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
 citations and explanations supporting such statement**

- 1 The following documents were cited in the International Search Report:

 D1: US 2002/079304 A1 (BRANDT PETER ET AL) 27 June 2002 (2002-06-27)
 D2: EP-A-0 651 307 (HEWLETT PACKARD CO) 3 May 1995 (1995-05-03)
 D3: US-A-6 002 240 (CUMMINGS JOHN A ET AL) 14 December 1999 (1999-12-14)
 D4: US 2003/099055 A1 (KIM WEONWOO ET AL) 29 May 2003 (2003-05-29)
- 2 Document D1 is considered to represent the most relevant state of the art for independent claim 1.
- 2.1 Document D1 discloses a computer component heater (D1, paragraph [0004] and figure)
 - a) operably coupled to a pulse width modulation power controller (D1, paragraph [0019]),
 - b) said power controller in operation varying a PWM duty cycle in relation to the voltage of the power source supplying the heater (D1, paragraph [0012]).
- 2.2 Thus, the combination of features of independent claim 1 is entirely disclosed by the device described in **D1**. Therefore, the subject-matter of claim 1 is **not new** and claim 1 is not allowable (Article 33(1) and (2) PCT).
- 2.3 The same objection is raised mutatis mutandis for the corresponding independent method claim 15.
- 2.4 According to Rule 6.2 (a) PCT, the claims shall not rely on references to the description or **drawings** unless where absolutely necessary. However, this is not the case in dependent claim 16. Therefore, said claim does not contain any additional features which, in combination with the features of claim 1 to which it refers, meet the requirements of the PCT with respect to **novelty** (Article 33(1) and (2) PCT).
- 3 The subject-matter of dependent claim 2 only differs from the heater according to D1

in that

the PWM duty cycle is related to the voltage of the heater's power source via a **lookup table**.

- 3.1 However, this way of determining the duty cycle is merely one of several straightforward possibilities from which the skilled person would select without the exercise of inventive skill. In particular, document D2 shows an improved resistive heating control system (D2, page 2, lines 35-40), where the duty cycle of the control signal is determined by using a **lookup table** with pre-calculated duty cycles based on the input voltage (D2, page 4, lines 55-58).
- 3.2 The skilled person would regard it as a normal design option to include this feature in the heater described in document D1 in order to improve its performance. Therefore, the subject-matter of dependent claim 2 does not involve an **inventive step** (Article 33(1) and (3) PCT).
- 3.3 The additional features of dependent claims 3-14 define only constructional details which are either known from document D1 or rendered obvious by the combination of documents D1 and D2. Therefore, said claims do not contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to **novelty** or **inventive step** (Article 33(1), (2) and (3) PCT).